2 X 50Watt Class D Audio Amplifier – TDA7492 User's Guide

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To keep the product in a best working condition and having a long service time, please operate it according to the relevant steps. The warranty lapses if the product is damaged because of incorrect use and your negligence.

Warning: Never immerse the product in the rain or any other humid environment to prevent the fire or electric shock.

Safety Precautions:

1. Carefully handle the power cord

Do not damage or deform the power cord, or it will cause the electric shock or abnormal working.

Removing the power cord from the socket, please confirm what you've hold is the socket not the power cord.

2. Never open the cover

Do not open the cover in order to prevent the electric shock. Any problem, please contact us.

3. Never put other things in the product

Do not put the metal in the product to prevent the liquid, or it will cause electric shock or abnormal working.

Operation Precautions:

1. Care the power cord

When you pull out the plug from the socket, do not pull the power cord but hold the plug.

2. Prevention of the high temperature

Never put the product in the place exposed by the sun or near to the heating equipment.

3. Caution of the rack or chassis installation

Never put this product in a closed rack.

4. Never open the cover

It's dangerous to open the bottom chassis or put your hand in the chassis, so do not open it. If this product has something wrong, pull out the power plug immediately and contact us.

5. Protect the chassis

Avoid spraying insecticides near the product. Do not wipe the product with liquid like gasoline, water or other solvents, which easily cause the change of the quality or the color. Use soft cloth to clean dust. Please follow the instructions in this user's manual when you use the chemical-treated cloth.

6. Prevent sundries from falling into this product

Be especially careful to prevent the sundries like needles, hairpins, coins from falling into this product.

7. When you go out

If you don't use this product in a long time, e.g. when you go out for a trip, you must pull out the plug from the power socket.

8. Take care with humidity, water and dust

Do not put this product in the highly humid position or the position with much dust. Do not place vases or something with water in on this product.

9. Please keep the manual well

After reading this instruction, please keep it well along with the warranty card，which will be helpful when there are faults.

Attention please. In order to explain clearly to users, the graphic representation in this user's manual may be some different from the real device.

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NOTES:

Product Version : **Ver 1.0**

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2 X 50WATT CLASS D AUDIO AMPLIFIER – TDA7492 USER'S GUIDE

Chapter 1. Overview

1.1 Overview

Welcome to use this self-made 2*50W digital control audio amplifier. This product is well-known for its small size, portable, elegant and its outer casing fully made from aluminum alloy which makes it tough and durable. As an ideal Class-D audio power amplifier and integrated with TDA7492 which is currently popular around the world, it not only provides dream sound but also has high efficiency, thus it can dissipate the heat after long-time working to ensure that the amplifier can works in a stable condition for long time.

Besides traditional RCA input jacks, a stereo phone jack is provided to make it much easier to be used with your second device such as mobile phone or portable players. A high quality headphone amplifier is also provided at the front panel.

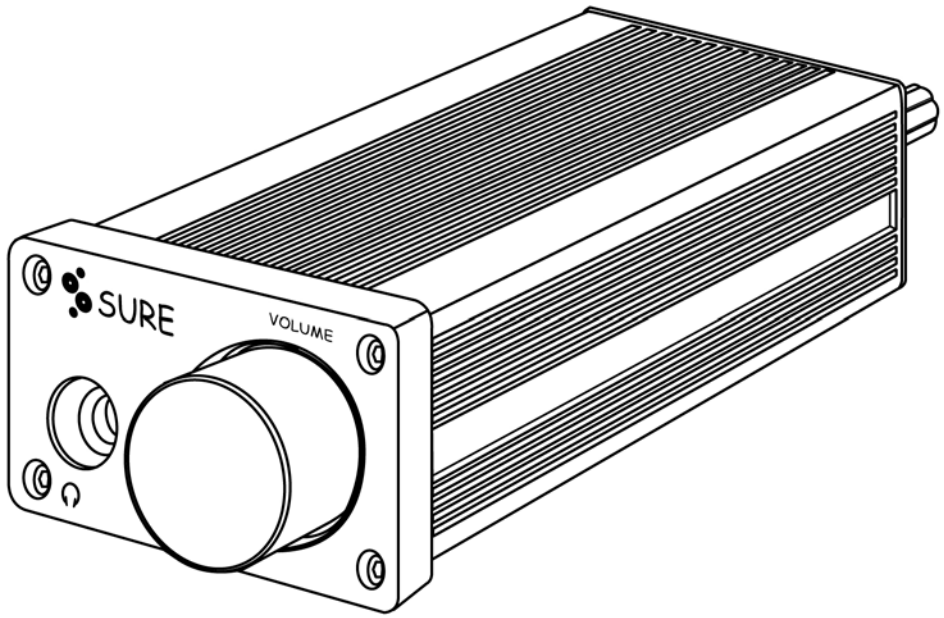
AA-AS32171 integrates a high-quality rotary encoder which employs high-performance audio processor IC ensuring precise shaft rotation and accurate volume adjustment.

AA-AS32171 supports dual-channel amplification and each channel is rated at 50W.

With built-in MCU, this product can provide input/output auto-override, over/under voltage protection, low current protection and display LED state.

This product can be powered by any DC power supply ranging from 9 to 24V. You can use it to drive any 4Ω or 8Ω passive speakers.

FIGURE 1-1 OVERVIEW



1.2 Accessory

Please check carefully the packing box, which contains the things as follows:

- 2 X 50Watt Class D Audio Amplifier - TDA7492

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1.3 Features

- Ideal Class-D power amplifier
- Range of power supply: DC9V-24V. Can be used with most laptop power adaptors.
- Fully made from aluminum alloy, compact, pleasing, fashionable and durable
- High-quality audio processor IC and original TDA7492 chip ensures long time use
- High input sensitivity
- Smart amplifier, auto-detect input and output connection. Suitable for the input of many kinds of audio signals
- MCU based, more fashionable and attractive, creating dynamic LED breathing effect
- Over / under voltage turn off
- Over current protection
- Over temperature protection

1.4 Applications

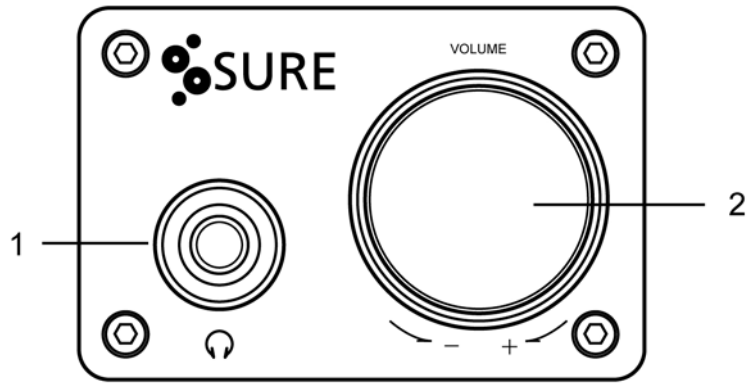
- Home Theater
- Desktop Amplifier
- Powered Subwoofers
- Powered DVD Systems
- Mini/Micro Systems
- MP3, Video CD output Amplification

1.5 Components and Function

1.5.1 Front panel

Please refer to the corresponding pages for the detailed information.

FIGURE 1-3 (POWER SWITCH, VOLUME KNOB)



1—Headphone Amplifier Output 2—volume knob

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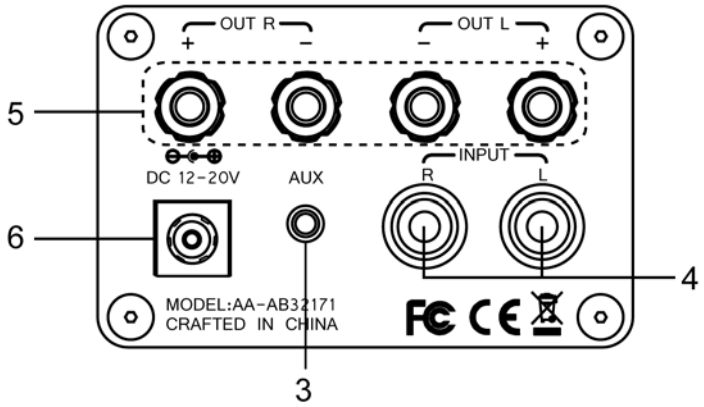
1.5.2 Back panel

FIGURE 1-4 (POWER INPUT, SPEAKER OUTPUT AND AUDIO SIGNAL INPUT)



3—audio signal input terminal (HP)

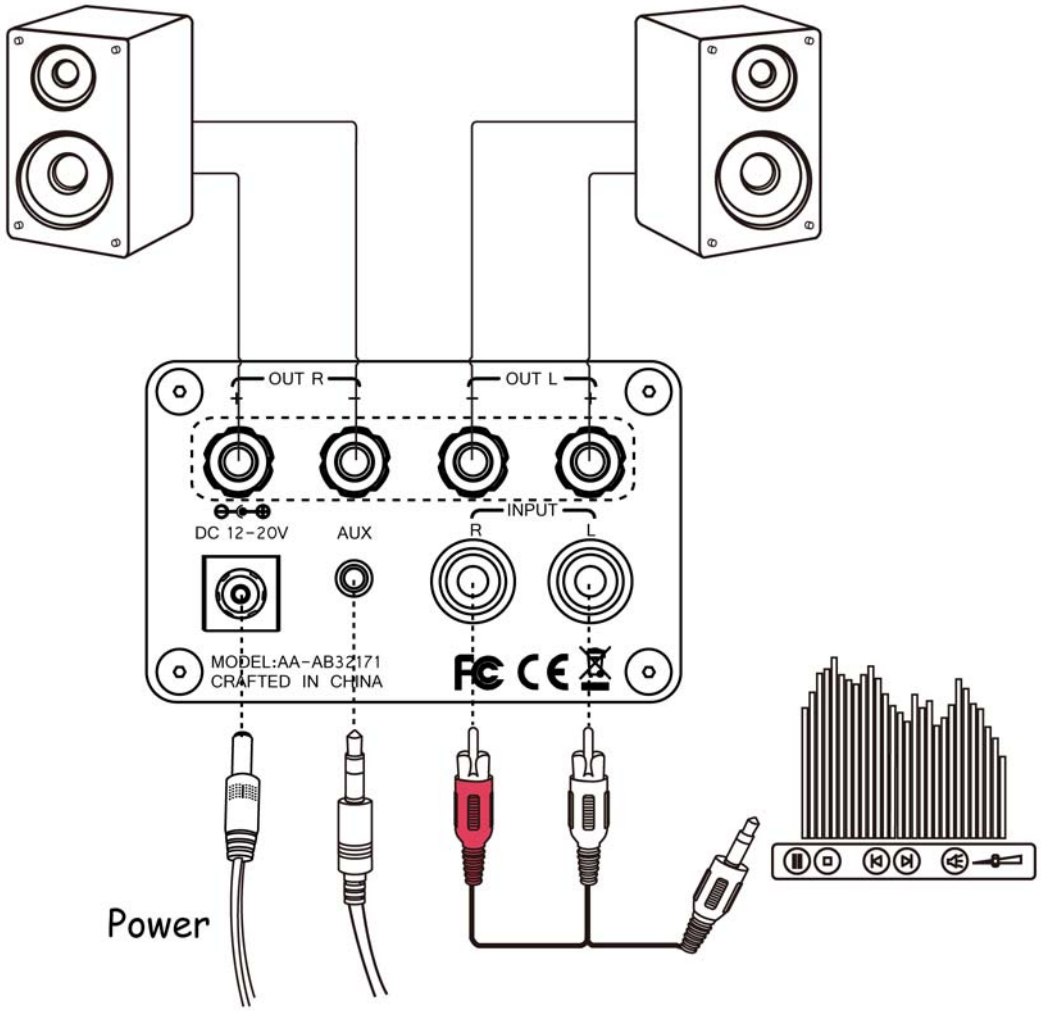
4—audio signal input terminal (RCA)

5—speaker output terminal

6—power input

1.5.3 Connection

FIGURE 1-5 CONNECTING SCHEMATICS



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Chapter 2. Hardware Detail

2.1 Power Connection

A voltage-regulated power of high-performance is necessary to provide basic and enough power so that this product could work stably, or any problem caused by poor power is out of the warranty.

This product works at DC9 - 24V. Please refer to **Chapter 3 for basic parameters**

2.2 Switch Setting

When powered up, the machine is staying in standby mode with warm LED breathing behind. After switched to operation mode the LED will turn off and the amplifier will start to work.

Push on the volume knob to switch between operation mode and standby mode.

TABLE 2-1 SWITCH FUNCTION

State	Function	LED state
Standby	Amplifier not working	LED lighting in a breathing-effect state
Operation	Amplifier working	LED turn off

2.3 Input Connection

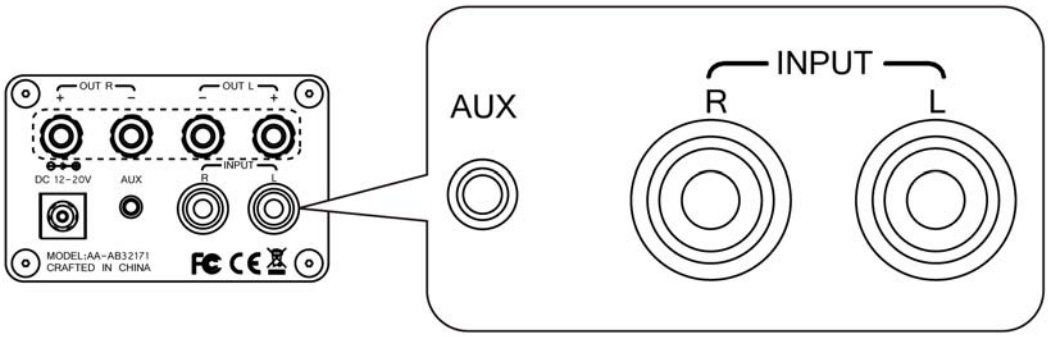
There are two input methods for this amplifier.

a) Audio signal input terminal (HP)

b) Audio signal input terminal (RCA)

Both terminals accept same audio signals and the HP terminal will override the RCA terminal automatically.

FIGURE 2-3 INPUT CONNECTION



2.4 Output Connection

This product adopts -

a) Amplified output signal for headphone at the front panel

b) Banana socket with two output channels to output amplified audio signal. Pay attention that LOUT+ and LOUT- are Left Output Channels, ROUT+ and ROUT- are Right Output Channels.

The output level of both a) and b) can be adjusted via the volume control knob. The headphone amplifier output will override the banana socket output automatically.

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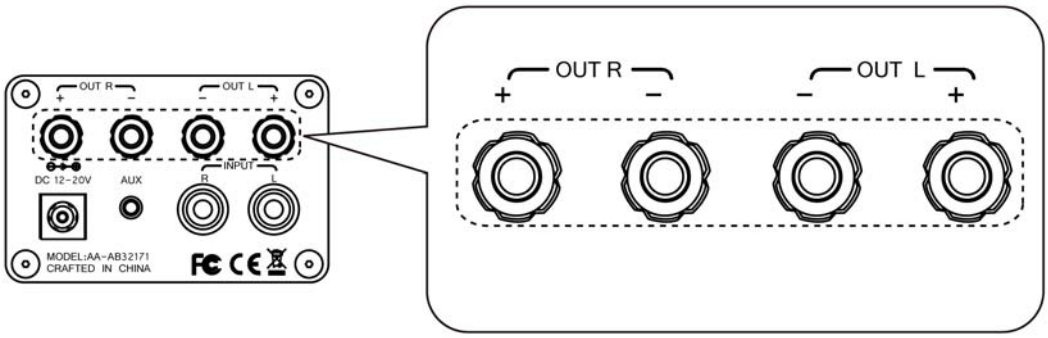
FIGURE 2-4 OUTPUT CONNECTION

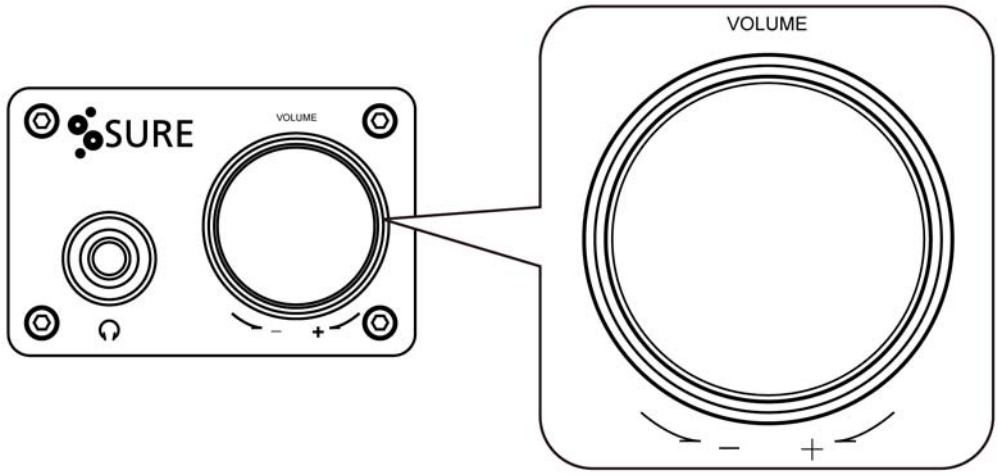


Note: LOUT- and ROUT- are not in the same net and can not be connected together. Moreover, LOUT+, LOUT-, ROUT+, ROUT- can not be connected to the ground.

2.5 Volume Control

We adopt digital volume potentiometer of high-quality which can adjust the volume precisely after long-time use

FIGURE 2-5 VOLUME CONTROL



2.6 LED Indicators

This product is based on MCU which controls the indicators to display dynamic LED state and make this product more fashionable and attractive. Please refer to table 2-1 for details.

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Chapter 3. Electrical Characteristics

3.1 Basic Parameters

Basic parameter tested @DC24V 8ohm (except for the parameters marked with *)

TABLE 3-1 BASIC PARAMETERS

Parameter	Min	Typical	Max
Power voltage	9V	19V	24V
Frequency	-	20Hz-20KHz(±3dB)	-
Output power* (V_{CC} = 24V, R_L = 6Ω)	-	40W, THD+N<1%	-
		50W, THD+N<10%	
THD+N	-	0.1% THD+N @1W, 8Ω	-
Efficiency	-	>80% @ 2 x 40W	-
Minimum Load Impendence	4 ohms	6 ohms	-
Input Impendence	-	60K	-
Power Gain	20.6dB	21.6dB	22.6dB
Working Temperature	0℃	25℃	55℃

Note: *The chip specifications by ST Microelectronics

3.2 Fault Tracing

If the amplifier does not work well, please read the following table:

TABLE 3-2 CORRECTIVE MAINTENANCE

Situation	Solutions
No sound	1. Check if it is connected with the power and confirm that the voltage regulator works well. If not, connect the power according to the schematics. 2. Check if the signal input cable is connected correctly and if there is signal. If not, connect the lines according to the schematic and input the audio signal. 3. Check if the output cable is damaged and if the speaker works or not. If not, change the output cable and the speaker. 4. Check if the LED keeps off or not. If not, restart it and ensure that the LED displays breathing effect in standby. If it still doesn't work, remove the power and contact us.
Suddenly no sound when the product is	1. Check if the product has worked for long time or if the audio signal is too high. If it is, turn off the power and turn it on again.

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working	
LED off	1. Check if it is connected with the power and confirm that the voltage regulator works well or not. If not, correctly connect it to the power according to the schematics.

Note: If the problems above still cannot be solved, maybe the product has something wrong. Now please turn off the power, pull out the power cord from the socket and then contact us. Please refer to chapter five for our contact information.

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Chapter 4. Mechanical Drawing

FIGURE 4-1 FRONT AND BACK PANELS

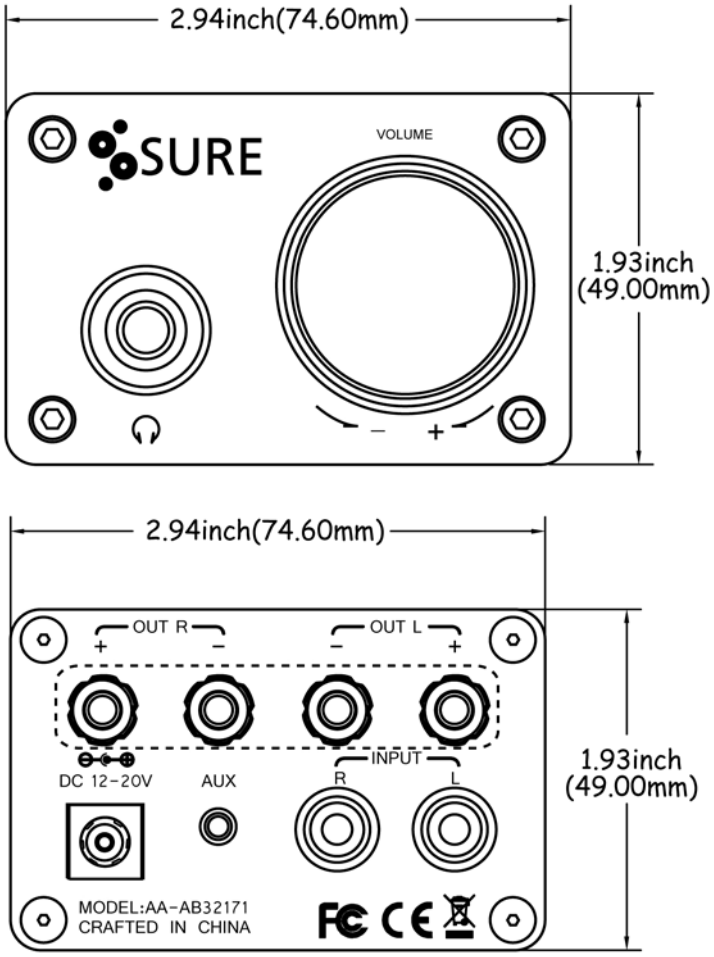
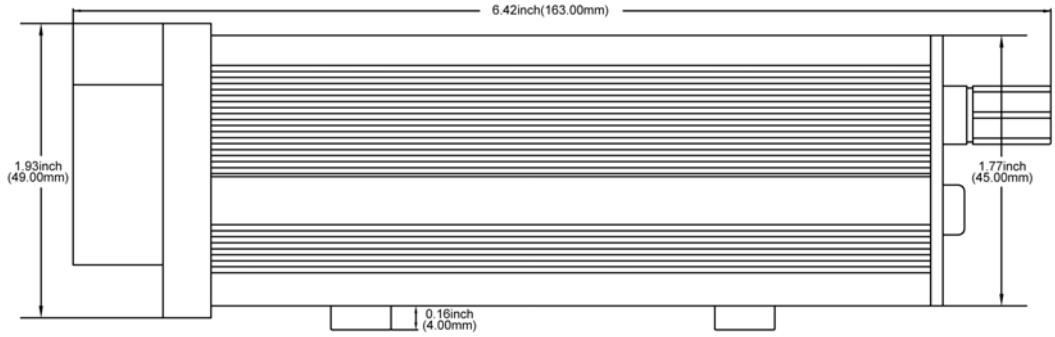


FIGURE 4-2 SIDE VIEW



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Chapter 5. Contact Us

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